

prototypes, using two U-shaped pieces of aluminium. Any similar enclosure will do, and there are plenty of ready made cases available from various advertisers if you don't want make your own. Alternatively, a ready made case with all the bits for this project is available if you want it from the same source as the kit.

When mounting the pcb, use all four mounting screws, and ensure that the bolts of the PA transistor case do not touch the base of the case.

The only part which may need some explanation is the bracket used for the drive and VFO capacitor. This was used as a means of mounting the capacitor and drive together, such that the body of the capacitor is over C7 on the pcb, and enabling the earthing lead on the capacitor to be soldered to the top foil just to the side of C7. A stiff piece of wire then connects from the other leads to point P. The scale was made by drawing on a piece of card stuck to a circular piece of aluminium screwed to the flange of

the drive. For anyone wanting to reproduce the case as shown, the size is 55mm high by 120 deep by 210mm wide. Some space was left in the case for possible add-ons in the future.

There is no reason why an internal speaker should not be used, the prototypes using an external speaker, and this could be mounted on the underside of the lid.

### A digital version...

One of the prototypes used a neat little digital readout to give it a state-of-the-art appearance, and get over the problems of the limited calibration available on the normal scale. The frequency meter used is the PCIM 177 module available directly from Ambit International. This type has the advantage of not generating any interference on receive.

This will take an input direct from C37 (use coaxial cable for the connection), when wired as a straight frequency counter, and

needs a +5v supply. The latter is best achieved by wiring the output of a 78L05 regulator direct to the +5v input (VDD) connection, decoupling this with a 1uF tantalum capacitor to earth (VSS), also connecting the centre pin of the 78L05 to VSS. The +12v rail goes direct to the input of the 78L05. Points S3, S4 & AM/FM should be connected to VDD (+5v), with all other pads left unconnected.

A bezel (type BEZ-10) was used to mount the display by affixing it to the back using cyanoacrylate adhesive, after cutting a suitable clearance hole for the bezel in the front panel. If the bezel is not available, an aperture just large enough to view the display through would need to be cut in the panel.

### Kit of parts

A complete author designed and approved kit of parts, including PCB, is available for this project. Please see advert on p63 for further details.

#### COMPONENTS LIST

R1, 2	5k6	TR2	2SK55, J310
R3, 11, 19, 23	47k	TR3, 6	BC108, BC238
R4, 29	1k	TR4	2N 66 57
R5, 6, 8, 9	100R	TR5, 7, 8	BC109, BC239
R7	150R	IC1	LM380N
R10	33k	D1, 4, 5, 6, 7	1N4148, 1N914
R12, 27, 31	4k7	D2	8v2 400mW Zener diode
R13	3k3	D3	4v7 400mW Zener diode
R14	15R	DBM1	SBL1-8, SRA-1
R15	82R	L1	41 turns on Amidon T68-2 dust iron core
R16, 17, 25, 26, 28, 30	10k	L2	TOKO 33uH 7BA RF Choke
R18	220R	L3, 6	TOKO 1mH 7BA or 8RB Choke
R20	100k	L4, 5	25 turns on T68-2 core tapped at 7 turns from earthy end.
R21	470R	T1	12 turns, centre tapped on Fair-Rite ferrite core type 59-61001101
R22	22k	M1 (optional)	100/ 200 uA FSD meter
R24	47R	S1, 2	DPCO miniature toggle
RV1, 4	10k 10mm horizontal preset	X1 (optional)	3.5 - 3.8MHz HC/ 6-U or HC/ 18-U crystal.
RV2	100k+ 100k dual linear pot.		
RV3	22k or 47k or 100k lin pot.		
C1	266pF polyvaricon variable		
C2	220pF ceramic plaquette		
C3	270pF polystyrene		
C4	10pF 7.5mm film dielectric trimmer		
C5, 9, 13, 14, 16, 34, 40, 41	10n ceramic disc		
C6, 7	1000pF polystyrene		
C8, 12, 17, 31, 33, 38	100n ceramic disc		
C10, 26	47uF 16v axial lead electro		
C11	1uF 16v electrolytic		
C15, 23, 24, 32	1n ceramic disc		
C18, 22	330pF ceramic plaquette		
C19, 21	140pF mica compression trimmer		
C20	56pF ceramic plaquette		
C25	0.47uF 16v radial electro		
C27, 29, 34	10uF 16v axial lead electro		
C28	220n 16v radial electro		
C30, 35, 36	100uF 16v radial electro		
C37	27pF ceramic plaquette		
C39	470pF ceramic plaquette		
TR1	2SK55, BF256		

All resistors are 0.25W 5% carbon film.

Coils are wound with 0.56mm dia (24swg) enamelled copper wire.

Also required:

1 6:1 Jackson epicyclic reduction drive with flange.

1 printed circuit board

30cm screened audio cable

150cm 0.56mm enamelled copper wire

Connecting wire.

2x6.4mm 6BA bolts + nuts and lockwashers.